



# UNITED STATES PATENT AND TRADEMARK OFFICE

CLD  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,337	09/02/2003	Mark Steven Habedank	134061	2967
7590	10/01/2004		EXAMINER	
John S. Beulick Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102			NGUYEN, NINH H	
			ART UNIT	PAPER NUMBER
			3745	
			DATE MAILED: 10/01/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/653,337	HABEDANK ET AL.
	Examiner	Art Unit
	Ninh H. Nguyen	3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed

- after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1)  Responsive to communication(s) filed on \_\_\_\_.
- 2a)  This action is **FINAL**.      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4)  Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-20 is/are rejected.
- 7)  Claim(s) \_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on 02 September 2003 is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a)  All    b)  Some \* c)  None of:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_.

### **DETAILED ACTION**

1. Claims 6, 8, and 16 are objected to because of the following informalities:

In claim 6, line 7, after “disk retainer”, --coupled-- should be added to clarify the claim.

In claims 8 and 6, lines 2 and 3, respectively “cantenary” should be replaced with --  
catenary--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 10-15, and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kalogeros (4,659,289).

Kalogeros discloses a seal assembly for a gas turbine engine (Fig. 2) including a first stage disk 12 and a second stage disk 18, the seal assembly comprising: a disk retainer 80; and an interstage seal assembly 22 extending between the first and second stage disks, the interstage seal assembly comprising a radially outer shell 24 extending radially outward from a web portion 62, the outer shell comprising an upstream arm and a downstream arm extending outwardly from the outer shell, the disk retainer 80 being coupled between the outer shell upstream arm and the first stage disk 12, the downstream arm coupled to the second stage disk 18;

wherein the disk retainer 80 is inherently secured in position by axial loading induced from the interstage seal assembly;

wherein the outer shell 24 is inherently in compression when the seal assembly is coupled between the first and second stage disks;

wherein the upstream arm is coupled to the disk retainer with an interference fit (Fig. 2), the downstream arm is coupled to the second stage disk with an interference fit;

wherein the seal assembly inherently facilitates extending a useful life of the turbine engine;

wherein the interstage seal inherently facilitates aligning the disk retainer with respect to the first stage disk.

4. Claims 1-2, 6-9, 10-16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Meade et al. (5,338,154).

Meade discloses a seal assembly for a gas turbine engine (Fig. 1) including a first stage disk 118 and a second stage disk 20, the seal assembly comprising: a disk retainer 50; and an interstage seal assembly 12 extending between the first and second stage disks, the interstage seal assembly comprising a radially outer shell 38 extending radially outward from a web portion 42, the outer shell comprising an upstream arm 46 and a downstream arm 48 extending outwardly from the outer shell, the disk retainer 50 being coupled between the outer shell upstream arm 46 and the first stage disk 18, the downstream arm 48 coupled to the second stage disk 20;

wherein the disk retainer 50 is inherently secured in position by axial loading induced from the interstage seal assembly;

wherein the upstream and downstream arms each extend arcuately in a catenaries contour from the outer shell (Fig. 1);

wherein the outer shell 38 is inherently in compression when the seal assembly is coupled between the first and second stage disks;

wherein the upstream arm is coupled to the disk retainer with an interference fit (Fig. 1), the downstream arm is coupled to the second stage disk with an interference fit;

wherein the seal assembly inherently facilitates extending a useful life of the turbine engine;

wherein the interstage seal inherently facilitates aligning the disk retainer with respect to the first stage disk.

***Prior Art***

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 2 patents.

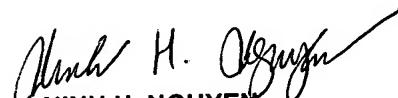
Antonellis (5,352,087) and Dziech et al. (6,283,712) are cited to show different turbine interstage seal assemblies.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (703) 305-0061 or (571) 272-4823 after November 18, 2004. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (703) 308-1044 or (571) 272-4820 after November 18, 2004. The fax number for this group is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.



NINH H. NGUYEN  
PRIMARY EXAMINER

Nhn  
September 29, 2004